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Milkability and the udder morphology traits in Tsigai, Improved Valachian, and Lacaune ewes

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The aim of this study was to compare the milkability traits and investigate the relationship between correlation udder morphology traits and milking characteristic in breeds mostly bred in Slovakia. The trial was performed with 24 ewes of three breeds: Tsigai (TS, n=8), Improved Valachian (IV, n=8;) and Lacaune (LC, n=8). Ewes were routinely milked twice a day in 1 × 24 milking parlour. The milkability was measured in two consecutive months June and July. Experimental milkings were performed during three successive days in the middle of both months. Udder morphology traits (teat position, cistern depth, and udder cleft) had been assessed by the use of linear scores one day before first evening milking when the milkability measurements started. During milkings, an actual milk yield was recorded in 1-second intervals using a graduated electronic milk collection jars. In total 286 measurements were recorded. The breed had significant effect on total milk yield ($P < 0.0439$). The average total milk yield was 0.44 ± 0.02 l, 0.40 ± 0.03 l, and 0.53 ± 0.02 l in TS, IV, and LC; resp. Total milk yield was positively correlated with maximal milk flow rate ($r = 0.37$; $P < 0.0001$), machine stripping milk yield ($r = 0.28$; $P < 0.0001$) and machine milking time ($r = 0.37$; $P < 0.0001$). Positive and significant correlations were found out between teat position and cistern depth ($r = 0.61$; $P < 0.0001$), teat position and maximal milk flow rate ($r = 0.52$; $P < 0.0001$). Total milk yield decreased with increased stage of lactation. Teat position and cistern depth changed throughout lactation. The breed had significant effect on total milk yield ($P < 0.0033$).

The goat mammary gland parenchyma: breed and milking frequency influence

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Tissular percentages (secretory, connective, ductal and vascular tissues), number and size of the alveoli were studied in udders of three dairy goat breeds under two milking frequencies (once vs. twice daily milking). The objectives of this study were to elucidate the influence of the breed and milking frequency on the proportion of the tissue components in the mammary gland in dairy goats; and to correlate the productive parameters (milk yield, milk composition, milk fractions and udder morphology) with the tissue parameters. Three goats of each studied breed (Majorera, Palmera and Tinerfeña), were milked during 6 weeks (mid lactation). The right half udder was milked twice daily and the left half udder was milked once daily. Moreover, during the experimental period, the productive parameters were recorded. Two samples from each gland were taken for the histological study and were analyzed using morphometric software. Macro and microscopic observations revealed a healthy mammary parenchyma, not damaged by the milking frequency. The statistical analysis revealed that tissue parameters were not influenced by the milking frequency, and the breed determined different percentages of tissue components. Correlations between udder morphological parameters and milk yield parameters determined the importance of globosity and udder cisternal compartment in milk yield of these breeds. Furthermore, it was determined that the percentage of secretory tissue in the mammary parenchyma had no correlation with the milk yield parameters in different high-production dairy breeds. In conclusion, the histological parameters were only influenced by the breed, and there were not correlations with the milk yield parameters.